



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/008,304

11/06/2001

Warren B. Nicholson

H201288/DE3-0057

3299

7590

05/25/2004

EDMUND P. ANDERSON
DELPHI TECHNOLOGIES, INC.
Legal Staff, Mail Code: 480-414-420
P.O. Box 5052
Troy, MI 48007-5052

EXAMINER

ELLINGTON, ALANDRA

ART UNIT

PAPER NUMBER

2855

DATE MAILED: 05/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/008,304

Applicant(s)

NICHOLSON, WARREN B.

Examiner

Alandra N Ellington

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment filed 2/13/04.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-31 is/are allowed.
- 6) ☒ Claim(s) 1,3,7 and 19 is/are rejected.
- 7) ☒ Claim(s) 2,4-6,8-18 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/17/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: See Continuation Sheet.

Continuation of Attachment(s) 6). Other: Approved replacement drawing sheets pgs.1-9.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 7 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Flavell (3,938,890).

- a. With respect to claim 1, Flavell discloses a torque sensor for determining the torque acting upon a shaft, the torque sensor comprising: a radiation source 26 emitting radiation of at least one wavelength; at least one sensor 28,30 sensing the emitted radiation generating thereby at least one intensity signal indicative of the intensity of the emitted radiation; at least one signal conditioner 14,16 receptive of the emitted radiation and positioned on a shaft 12 between the radiation source 26 and the at least one sensor 28,30 thereby conditioning the emitted radiation; and a circuit ({Fig. 6}) receptive of the at least one intensity signal determining thereby the torque acting upon the shaft 12 and compensating for the attenuation of the emitted radiation (col. 3 lines 64-68, col. 4 lines 1-51 {Figs. 1 and 6}).

- b. With respect to claim 3, Flavell discloses the torque sensor as set forth in claim 1 wherein the at least one signal conditioner 14,16 comprises a plurality of polarizers having polarization axes oriented at a prescribed angle with respect to one another (col. 3 lines 54-60).

- c. With respect to claim 7, Flavell discloses the torque sensor as set forth in claim 1 wherein the at least one sensor 28,30 comprises a photodiode (col. 4 lines 53-54 {Fig. 7}).
- d. With respect to claim 19, Flavell discloses the torque sensor as set forth in claim 1 wherein the circuit ({Fig. 6}) is receptive of the at least one intensity signal thereby determining the torque acting upon the shaft 12 (col. 4 lines 7-40).

Allowable Subject Matter

3. Claims 21-31 are allowed.

a. The following is an examiner's statement of reasons for allowance: The reasons for allowance of claims 21-31 are based on the inclusion of *determining the intensity of the radiation due to the contamination of the sensor only; and calculating the difference between the intensity of the radiation due to a combination of the torque acting upon the shaft and the contamination of the sensor and the intensity of the radiation due to the contamination of the sensor only to generate a compensated signal indicative only of the torque acting upon the shaft*. These limitations in combination with other inventive features render the claims allowable.

b. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Art Unit: 2855

4. Claims 2, 4-6, 8-18 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments with respect to claims 1-31 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
- a. Hollick et al (3,596,100) discloses a torque meter with light sensing.
 - b. White (3,474,255) discloses a means to detect amount and direction of shaft rotation.
 - c. Canada et al (2,98,378) discloses an optical dynamometer.
 - d. Johnson, Jr. et al (3,495,452) discloses a torque meter.
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alandra N Ellington whose telephone number is (571) 272-2178. The examiner can normally be reached on Monday - Friday, 7:30am - 4:00pm.
8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Art Unit: 2855

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alandra Ellington
Art Unit 2855



ane



EDWARD LEEKOWITZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800